WE CLAIM:

1. A data storage system, comprising:

a first NSC including a processor and associated non-volatile memory divided into a primary memory segment and a mirror memory segment;

a second NSC including a processor and associated non-volatile memory divided into a primary memory segment and a mirror memory segment;

at least one FCAL connected to the first NSC and the second NSC;

a plurality of storage devices connected to the FCAL;

a point-to-point communication link between the first NSC and the second NSC;

wherein the primary memory in the first NSC and the mirror memory in the second NSC are allocated in corresponding blocks.

2. The data storage system of claim 1, wherein the primary memory in the second NSC and the mirror memory in the first NSC are allocated in corresponding blocks.

3. The data storage system of claim 1, wherein command-response data is transmitted between the first NSC and the second NSC in one or more named resources.

4. The data storage system of claim 1, wherein data transmitted as a result of a write I/O operation directed by the first NSC is mirrored in the mirror memory of the second NSC.

5. The data storage system of claim 1, wherein data transmitted as a result of a write I/O operation directed by the second NSC is mirrored in the mirror memory of the first NSC.

6. The data storage system of claim 1, wherein the NSCs reserve positions for command-response data in the data flow on the point-to-point communication link.

7. A method of operating a data storage system, comprising:

receiving an I/O request at a primary NSC;

allocating a block of cache memory in the primary NSC;

receiving data for a write operation in the primary NSC; and

transmitting the data to a corresponding block of cache memory in a mirror NSC.

8. The method of claim 7, wherein the step of receiving an I/O request at a primary NSC comprises receiving a write I/O request from a host computer.

9. The method of claim 7, wherein the step of allocating a block of cache memory in the primary NSC automatically allocates a corresponding block of cache memory in the mirror NSC.

10. The method of claim 7, wherein the step of transmitting the data to a corresponding block of cache memory in a mirror NSC implements an atomic write process.

11. The method of claim 7, wherein the step of transmitting the data to a corresponding block of cache memory in a mirror NSC includes transmitting context information with the data.